IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 9, 14 and 19 in accordance with the following:

1. (Currently Amended) An optical amplifying apparatus for amplifying wavelength division multiplexed signals, comprising:

an optical amplifying unit amplifying an input light;

an input branching unit branching the input light;

an optical filter passing a specific wavelength of the branched light;

a specific wavelength measuring unit measuring a power of filtered light;

a total power measuring unit measuring a total light power of the branched light; and

a control unit controlling the optical amplifying unit based on the power of the filtered light and the total light power measured by the specific wavelength measuring unit and the total power measuring unit, respectively,

wherein the control unit ~~controls the optical amplifying unit such that a gain of the total light power remains constant~~ determines whether a change of the output light is caused by a loss of transmission path or a change in wavelength number by comparing a first change of the power of the filtered light with a second change of the total light power.

2. (Previously Presented) The optical amplifying apparatus as claimed in claim 1, wherein said specific wavelength measuring unit further comprises a variable-wavelength optical filter.

3. (Previously Presented) The optical amplifying apparatus as claimed in claim 1, wherein

said control unit, when the light power measured by said specific wavelength measuring unit does not change and the total light power measured by said total power measuring unit changes, determines the number of multiplexed wavelengths of said optical signals based on the light power measured by said specific wavelength measuring unit and the total light power measured by said total power measuring unit.

4. (Previously Presented) The optical amplifying apparatus as claimed in claim 1, wherein said control unit, when change in the light power measured by said specific wavelength measuring unit is equal to change in the total light power measured by said total power measuring unit, controls the input of said amplifying apparatus based on the light power measured by said specific wavelength measuring unit and the total light power measured by said total power measuring unit so as to compensate for the loss of optical transmission path.

5. (Previously Presented) The optical amplifying apparatus as claimed in claim 1, wherein

said measuring point is positioned at an output stage; and

said control unit controls the input of said optical amplifying apparatus based on the number of multiplexed wavelengths, the light power measured by said specific wavelength measuring unit, and the total light power measured by said total power measuring unit so as to compensate a gain gradient of input optical signals.

6-8. (Cancelled).

9. (Currently Amended) An optical amplifying apparatus for amplifying wavelength division multiplexed signals, comprising:

an optical amplifying unit amplifying an output light;

an output branching unit branching the output light;

an optical filter passing a specific wavelength of the branched light;

a specific wavelength measuring unit measuring a power of filtered light;

a total power measuring unit measuring a total light power of the branched light; and

a control unit controlling the optical amplifying unit based on the power of the filtered light and the total light power measured by the specific wavelength measuring unit and the total power measuring unit, respectively,

wherein the control unit ~~controls the optical amplifying unit such that a gain of the total light power remains constant~~ determines whether a change in output light is caused by a loss of transmission path or a change in wavelength number by comparing a first change of the power of the filtered light with a second change of the total light power.

10. (Previously Presented) The optical amplifying apparatus as claimed in claim 9,

wherein said specific wavelength measuring unit further comprises a variable-wavelength optical filter.

11. (Previously Presented) The optical amplifying apparatus as claimed in claim 9, wherein

said control unit, when the light power measured by said specific wavelength measuring unit does not change and the total light power measured by said total power measuring unit changes, determines the number of multiplexed wavelengths of said optical signals based on the light power measured by said specific wavelength measuring unit and the total light power measured by said total power measuring unit.

12. (Previously Presented) The optical amplifying apparatus as claimed in claim 9, wherein said control unit, when change in the light power measured by said specific wavelength measuring unit is equal to change in the total light power measured by said total power measuring unit, controls the output of said amplifying apparatus based on the light power measured by said specific wavelength measuring unit and the total light power measured by said total power measuring unit so as to compensate for the loss of optical transmission path.

13. (Previously Presented) The optical amplifying apparatus as claimed in claim 9, wherein

said measuring point is positioned at an output stage; and

said control unit controls the output of said optical amplifying apparatus based on the number of multiplexed wavelengths, the light power measured by said specific wavelength measuring unit, and the total light power measured by said total power measuring unit so as to compensate a gain gradient of output optical signals.

14. (Currently Amended) An optical amplifying apparatus for amplifying wavelength division multiplexed signals, comprising:

a first optical amplifying unit amplifying an input light;

a second optical amplifying unit amplifying ~~an output~~ light outputted by the first optical amplifying unit;

a first input branching unit branching the input light;

a second output branching unit branching ~~the~~ an output light of the second optical amplifying unit;

a first optical filter passing a specific wavelength of the branched input light;

a second optical filter passing a specific wavelength of the branched output light;

a first specific wavelength measuring unit measuring a power of filtered input light;

a second specific wavelength measuring unit measuring a power of filtered output light;

a first total power measuring unit measuring a total input light power of the branched input light;

a second total power measuring unit measuring a total output light power of the branched output light; and

a control unit controlling the optical amplifying units based on the power of filtered input light, the power of filtered output light, the total light power of the branched input light, and a total light power of the branched output light measured by the first and second specific wavelength measuring units and the first and second total power measuring units,

wherein the control unit ~~controls the first and the second optical amplifying unit such that a gain of the total light power remains constant~~ determines whether a change of the output light is caused by a loss of transmission path or a change in wavelength number in the first or the second amplifier, by comparing a first change of the power of the filtered input light with a second change of the total input light power, and a third change of the power of the filtered output light with a fourth change of the total output power.

15. (Previously Presented) The optical amplifying apparatus as claimed in claim 14, wherein said specific wavelength measuring units further comprises variable-wavelength optical filters.

16. (Previously Presented) The optical amplifying apparatus as claimed in claim 14, wherein

said control unit, when the light power measured by said specific wavelength measuring units does not change and the total light power measured by said total power measuring unit changes, determines the number of multiplexed wavelengths of said optical signals based on the light power measured by said specific wavelength measuring units and the total light power measured by said total power measuring unit.

17. (Previously Presented) The optical amplifying apparatus as claimed in claim 14, wherein said control unit, when change in the light power measured by said specific wavelength measuring unit is equal to change in the total light power measured by said total power

measuring unit, controls the input and output of said amplifying apparatuses based on the light power measured by said specific wavelength measuring units and the total light power measured by said total power measuring unit so as to compensate for the loss of optical transmission path.

18. (Previously Presented) The optical amplifying apparatus as claimed in claim 14, wherein

said measuring point is positioned at an output stage; and

said control unit controls the output of said optical amplifying apparatus based on the number of multiplexed wavelengths, the light power measured by said specific wavelength measuring units, and the total light power measured by said total power measuring unit so as to compensate a gain gradient of output optical signals and input optical signals.

19. (Currently Amended) An optical amplifying apparatus for amplifying wavelength division multiplexed signals, comprising:

a power measuring unit measuring a total light power of branched light which is branched from the wavelength division multiplexed signals, and light power of the branched light corresponding to a predefined wavelength range; and

a control unit controlling an optical amplifying unit based on the light power of branched light corresponding to the predefined wavelength range, and the total light power of the branched light,

wherein the control unit ~~controls the optical amplifying unit such that a power gain of the wavelength division multiplexed signals remains constant~~ determines whether a change of output light is caused by a loss of transmission path or a change in wavelength number by comparing a first change of the light power of branched light corresponding to the predefined wavelength range with a second change of the total light power.